Selling news and advertising space: Economics of Dutch newspapers

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SELLING NEWS AND ADVERTISING SPACE: THE ECONOMICS OF DUTCH NEWSPAPERS

BY

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1 INTRODUCTION

(Daily) newspapers have salient characteristics which distinguish them from other 'regular' products (Reddaway (1963)). First, newspapers are sold on two different markets: copies are sold to readers and advertising space is sold to advertisers. Second, a newspaper is perishable and loses its original character rapidly. A newspaper today is a piece of wrapping paper tomorrow. Third, while the demand for copies is fairly stable over the week, month or even year, the demand for advertising space fluctuates even within a week.

Apart from these distinguishing characteristics which have an economic content, newspapers are different from other products since they represent the free press. To ensure economic independency of newspapers, the Dutch government has given financial support to the Dutch newspaper industry on several occasions. In the seventies, the newspaper industry received money to compensate for income losses due to the introduction of television and radio advertising. At the end of the 1980s, the newspaper industry was again compensated for income losses as TV advertising increased.

Over the past decades newspapers have had to compete with an increasing number of new information media like television, teletext, and video. As a medium for advertising, there was increased competition due to the introduction of radio and TV advertising in the late 1960s and due to the increasing importance of direct mail. Nevertheless, over the past 25 years real revenue of newspapers has approximately doubled. The share of revenue from selling copies has increased from some 35% in the mid 1960s to 45% in the beginning of the 1990s. The reader market is much more stable than the advertising market, which shows a clear cyclical pattern.

There are clear interactions between the reader market on which copies are sold and the market for advertisements. The interactions go both ways. First, there is

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the downward spiral: if revenue from selling advertisement space goes down, there are less funds available to make a quality newspaper. Therefore, the newspaper will become less attractive to readers and the number of readers declines. This may lead to a further fall in advertisements because there are less readers, *etc.* (Engwall (1975)). Second, newspapers may increase the price per copy in order to compensate for the decline in advertisements. If the price elasticity is very small, this will not cause a substantial decline in the number of readers.

The first form of interaction implies that there is a positive influence of advertising revenue on circulation. The second interaction implies that there is a negative influence of advertising revenue on consumer price per copy. In theory, the two relations may exist both at the level of individual newspapers and at the market level. In practice, the first mechanism is more relevant at the level of individual newspapers, referring to competition within markets. If competition for advertising revenue comes from other mass media then the second mechanism is more relevant at the market level, referring to interaction between the reader and advertising markets of the newspapers.

This article presents an analysis of developments over the period 1968–1991 on both the reader and advertising markets of Dutch newspapers. We are interested in the characteristics of both markets and their interactions. Our analysis shows that newspaper revenue is mainly influenced by macroeconomic developments. A negative influence of TV advertising on revenue from the advertising market exists, but is fairly limited. Besides, the newspaper industry seems to be able to overcome these threats to their revenue by raising the real prices they charge for their products.

This article is set up as follows. In section 2 we describe the structure of the Dutch newspaper industry and discuss developments over the past decades. In section 3 we model both newspaper markets. Section 4 presents the estimation results. In section 5 we look at the near future using the estimation results for some model simulations. Section 6 concludes. Finally, the Appendix describes the symbols and data used in the analysis.

2 STRUCTURE AND DEVELOPMENTS

2.1 *Structure*

In 1991, 18 independent publishers were selling 45 editorially independent newspapers in The Netherlands. These newspapers can be classified by area and time of distribution. 8 newspapers are sold nationwide, of which 5 appear in the early morning, and 3 in the late afternoon. The other 37 newspapers emphasize regional news coverage and are only sold regionally.

Newspapers are differentiated with respect to the number of copies sold, price per copy, and advertising rates.[1] Table 1 gives information on the individual

1 Note that information about the advertising volume of individual newspapers is lacking.

TABLE 1 – SOME KEY FIGURES ON DUTCH NEWSPAPERS

	Circulation (1991)	Quarterly subs.rate (Hfl., 1991)	10000 mm adv.rate (Hfl., 1990)
National morning newspapers			
De Telegraaf	720,900	73.40	985
Algemeen Dagblad	413,900	74.40	606
De Volkskrant	342,100	81.75	506
Trouw	120,500	92.60	230
Nederlands Dagblad	25,663	81.15	61
National evening newspapers			
NRC Handelsblad	241,900	99.50	596
Het Parool	100,800	74.40	262
Reformatorisch Dagblad	53,097	77.65	88
Total national newspapers	**2,023,860**	**81.86**	
local morning newspapers	1,036,842	77.96	
local evening newspapers	1,568,679	76.61	
Total local newspapers	**2,605,521**	**76.96**	
Overall	**4,629,381**	**77.79**	

Explanatory note: Overall figures do not include Het Financieele Dagblad.
Source: De Perscombinatie.

national newspapers and the aggregate of regional morning and evening newspapers. Regional newspapers account for more than half of the total number of copies sold. Clearly, newspaper circulation is varied, and, not surprisingly, advertising rates are equally varying, for both national and regional newspapers.

Geographically, national newspapers face the same potential market. Therefore, differences in circulation have to be the result of diversity with respect to non-geographical features like socio-economic, political and religious background of the readers. The diversity in circulation of regional newspapers is more obvious since they are hardly geographically competing. Therefore, the number of copies sold is largely determined by the size of the population in the relevant region. There is not much difference in subscription rates between individual newspapers. About 78 Dutch guilders is charged for a three month subscription. Obvious exceptions are the so called 'quality newspapers,' NRC Handelsblad, Trouw, and De Volkskrant, which charge their readers up to 25% more. Quality newspapers distinguish themselves by relatively low absolute price and income elasticities, probably because of the fact that they have relatively wealthy subscribers. Price differences

between these and the other newspapers are quite stable over time. Obviously, there is not much price competition between Dutch newspapers. In fact, price increases are always coordinated.

2.2 *Developments*[2]

Newspaper revenue has increased substantially over the past decades. Figure 1 shows that real total newspaper revenue has doubled over the period 1966–1990.

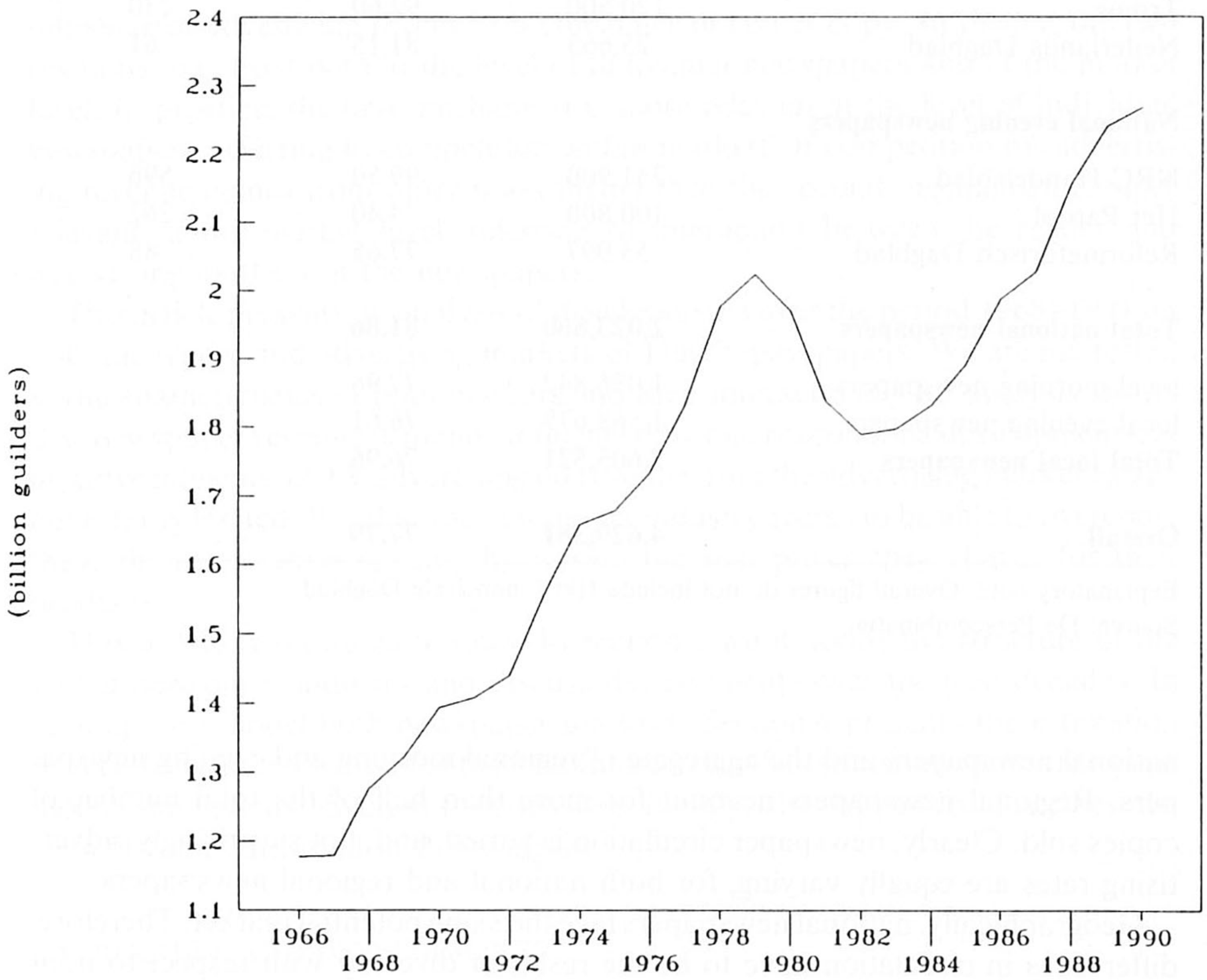

Figure 1 – Real total newspaper revenue (Hfl. 1980)

Only the 1980s recession temporarily slowed this growth. The reader and advertising markets separately have not been equally responsible for this growth. As shown in Figure 2, the revenue from the reader market has gradually increased over the past decades. A decrease in real copy revenue is a rare event. The developments on the advertising market are very much different. As shown in

2 Source of data used in this section: De Nederlandse Dagbladpers (Dutch Daily Press). Nominal figures are deflated by the consumer price index (source: Central Planning Bureau).

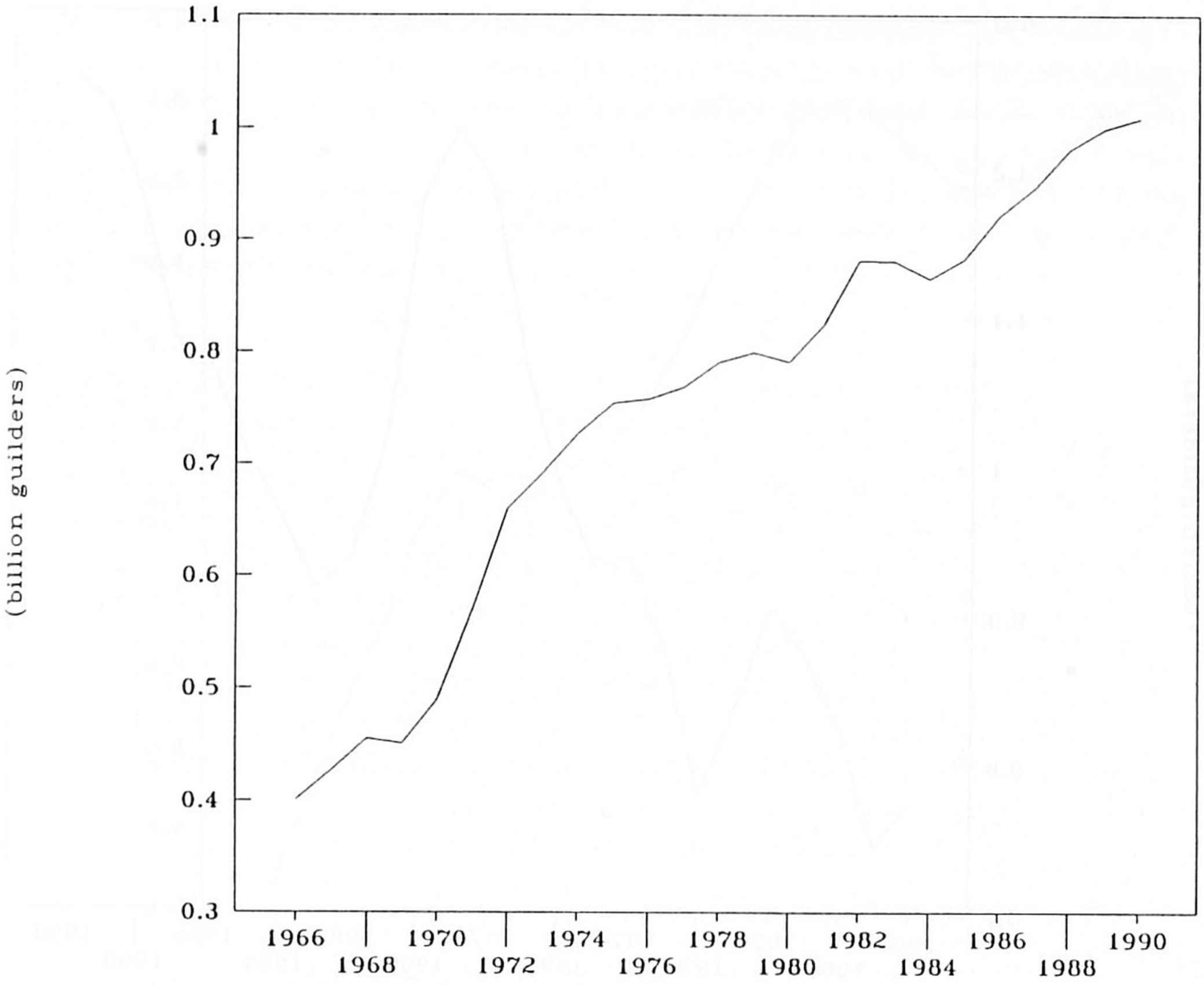

Figure 2 – Real copy revenue (Hfl. 1980)

Figure 3, real advertising revenue fluctuates substantially. Severe declines in real advertising revenue have occurred in the recession periods 1970–1972 and 1979–1983. Comparing the information in Figures 1, 2, and 3, it is obvious that the cyclical sensitivity of total newspaper revenue originates from the cyclical sensitivity of advertising revenue.

From a comparison of Figures 2 and 3 one may deduce that the increase in copy revenue accounts for 60% of total revenue growth. Figure 4 shows the development of total newspaper circulation, which increased from 3.6 million in 1968 to 4.8 million in 1990. Again, there are obvious cyclical downward movements in the periods 1970–1972 and 1980–1983. Apart from these periods there is a clear upward trend in newspaper circulation. A comparison of Figures 2 and 4 shows that while there are fluctuations in circulation there are no corresponding fluctuations in real copy revenue. There is obviously an anticyclical pattern in real subscription rates: a decline in circulation is compensated by an increase in subscription rate. From this we conclude that newspapers do not face severe price competition on their reader market with other mass media. There may be competi-

Figure 3 – Real advertising revenue (Hfl. 1980)

tion between newspapers and other sources of information like radio, television and magazines, but this competition is not price determined. In times when circulation goes down, newspapers raise the subscription rates. Not only does this compensate for the loss in revenue, but, as a rule, even increases revenue from the reader market.

Most of the fluctuations in advertising revenue originate from fluctuations in the volume of advertising space sold. On the advertising market, declines in volume are not compensated by rises in advertising prices. Advertisers have several means of reaching (potential) consumers: radio, television, magazines, direct mail. On the advertising market, price competition is more severe than on the reader market. Nevertheless, the greater part of the growth of newspaper advertising revenue comes from a 30% real price increase over the period.

In the past decades, there have also been major changes in the structure of the Dutch newspaper industry. Growing real revenue had to be shared by a declining number of publishers and newspapers. The number of independent publishers decreased from 34 in 1970 to 21 in 1990. The number of newspapers decreased

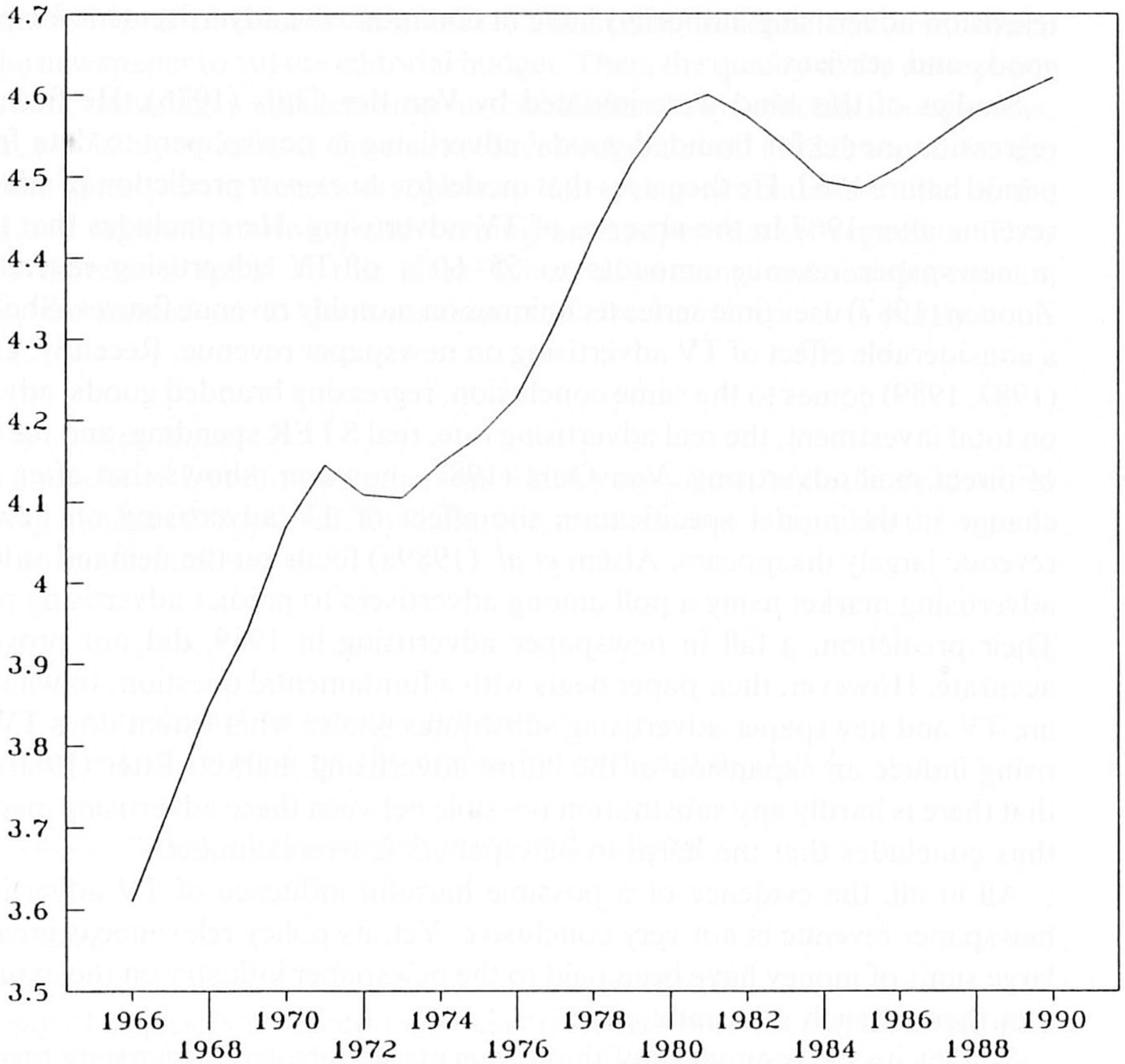

Figure 4 – Number of copies sold (mid-year figures)

from 54 in 1970 to 47 in 1990. Empirical research shows that this concentration in the Dutch newspaper market mainly took place in the periods 1970–1975 and 1980–1982 (Alsem *et al.* (1982, 1988)).

3 MODELLING THE NEWSPAPER MARKETS

3.1 *Previous Empirical Research*

Only a few empirical studies exist on both components of the Dutch newspaper market. We briefly discuss some of the results.

Most of the empirical research is inspired by the Dutch policy of compensating newspapers for their loss in advertising revenue due to the introduction of TV (and radio) advertising in 1967. Therefore, most research focuses on that part of the advertising market that newspapers and TV advertising (STER, Dutch radio and

television advertising authority) have in common: the advertisement for branded goods and services.

Studies of this kind were initiated by Van der Chijs (1976). He fits a linear regression model for branded goods' advertising in newspapers to data from the period before 1967. He then uses that model for an *ex post* prediction of advertising revenue after 1967 in the absence of TV advertising. He concludes that the loss in newspaper revenue amounts to 55–60% of TV advertising revenue. Van Zoonen (1987) uses time series techniques on monthly revenue figures. She notices a considerable effect of TV advertising on newspaper revenue. Recently, Driehuis (1987, 1989) comes to the same conclusion, regressing branded goods' advertising on total investment, the real advertising rate, real STER spending, and the volume of direct mail advertising. Van Ours (1987), however, shows that after a slight change in the model specification the effect of TV advertising on newspaper revenue largely disappears. Alsem *et al.* (1989a) focus on the demand side of the advertising market using a poll among advertisers to predict advertising revenue. Their prediction, a fall in newspaper advertising in 1989, did not prove to be accurate. However, their paper deals with a fundamental question: to what extent are TV and newspaper advertising substitutes and to what extent does TV advertising induce an expansion of the entire advertising market. Ettèr (1980) argues that there is hardly any substitution possible between these advertising media, and thus concludes that the harm to newspapers is overestimated.

All in all, the evidence of a possible harmful influence of TV advertising on newspaper revenue is not very conclusive. Yet, its policy relevance is great, since large sums of money have been paid to the newspaper industry on the assumption that there is such a harmful effect.

Studies on the economics of the reader market are rare. Aggregate revenue on this market is investigated by Van Ours (1983). He distinguishes volume and price developments. Linear regression reveals a price elasticity of demand of -0.18 and a spending elasticity of demand of 0.30 in the period 1971–1982. These figures are supported by Alsem *et al.* (1989b) for the period 1972–1988. Because the price elasticity is larger than -1, revenue can be increased by raising the price. Indeed, newspaper businesses appear to have passed increased costs and revenue shortfalls due to decreased advertising revenue on to consumers. Van Ours shows that every percent drop in advertising revenue leads to a 0.6% real price increase.

There are clear interactions between the advertising and reader markets. One interaction between the two markets has already been mentioned: the negative relation between advertising income and the subscription rate. Interestingly, prices are not raised up to an aggregate revenue maximizing level, *i.e.* up to a level at which the price elasticity equals -1. Of course, this could be the result of a competitive market structure. Another possible explanation is a negative side effect of price increases on the advertising volume through a decrease in circulation. Together with the already mentioned negative effect of advertising revenue decline on editorial quality and thus on circulation, we have a 'circulation spiral'

(Engwall, 1975). If circulation decreases, advertising revenue declines, which forces the newspaper to cut the editorial budget. Then, the quality of the newspaper will decline, inducing a further drop in circulation. This circulation spiral is, however, not likely to hold at the market level. Alsem *et al.* (1982) tested for the circulation spiral at the level of segments, *i.e.* using circulation totals of the national and regional, morning and evening newspaper market segments. They conclude there is a spiral at this level. When advertising revenue drawbacks, however, are passed on to the consumer, the circulation spiral is partly compensated.

3.2 *A Theoretical Model*

We use a model of Dutch newspapers in which revenue on both the reader and advertising markets is specified. By definition total revenue is equal to the sum of revenue on both markets:

$$y = y_l + y_a \tag{1}$$

y = real total newspaper revenue
$y_l(y_a)$ = real revenue on the reader (advertising) market

On the reader market we distinguish price and volume:

$$y_l = p_l q_l \tag{2}$$

The supply of copies is assumed to be elastic. Therefore, circulation is entirely determined by demand, which is assumed to be positively correlated with aggregate consumer income, and negatively correlated with price. Furthermore, we investigate for an 'editorial quality' relation with advertising revenue. Although this circulation spiral probably only exists at the level of the individual newspapers we investigate its relevance at the aggregate level:

$$q_l = f_{ql}(\underset{+}{C}, \underset{-}{p_l}, \underset{+}{y_a}, u_{ql}) \tag{3}$$

C = volume of aggregate consumption
p_l = real subscription rate
u_x = error component ($x = ql, pl, ot, bg, pa$)

As mentioned in the previous section, aggregate newspaper circulation is not likely to be very price elastic. This facilitates the passing on of cost increases and revenue shortfalls to consumers. Therefore, the price, *i.e.* the average subscription rate, is specified as a function of cost and revenue on the advertising market. We assume that increases in the cost of producing newspapers cause increases in the price of newspapers. Likewise, revenue from the advertising market is assumed to have

a negative effect on the price per copy. Thus, we end up with price equation:

$$p_l = f_{pl}(\underset{+}{k}, \underset{-}{y_a}, u_{pl}) \tag{4}$$

k = real newspaper cost indicator

On the advertising market we also distinguish price and volume. More precisely, we consider a (weighted) price of advertising space per copy and the (aggregated) volume of advertising space per copy. We distinguish two types of advertising products: for branded goods and for other advertising. For practical reasons, prices for both advertisement types are assumed to be the same:

$$y_a = p_a(q_{bg} + q_{ot}) \tag{5}$$

p_a = real advertising rate
$q_{bg}(q_{ot})$ = volume of branded goods'(other) advertising

There are obvious substitution possibilities for newspaper advertisements, but newspapers also have characteristics that distinguish them from television or magazine ads. Only newspaper advertising for branded goods is assumed to be affected by TV and direct mail advertising. However, because newspaper advertising and advertising using other media are to some extent substitutes, we expect a negative response to increases in advertising rates. In this connection, there may be some positive effect of prices, or negative effect of volumes of competing advertising media on the demand for newspaper advertising.[3] As the demand for TV advertising (STER) has always exceeded the supply, we expect the STER volume (capacity) to be more important than STER prices. Additionally, increased price competition may have a negative effect on advertising rates, which further increases the negative effect of competition on the advertising market on newspaper advertising revenue.

We expect both advertising volumes to be procyclical. Branded goods' advertising may be stimulated by increasing investments, or by the need to get a hold on increasing consumer expenditure. Advertising for other goods includes varying categories like personnel and classified advertising. Some are stimulated by investment (consider, for instance, the effect of investment in human capital on personnel advertising), others by consumer expenditure (possibly, some classified ads). We could also consider a more direct determinant of the volume of job advertising, *i.e.* the number of vacancies. Reliable information on this quantity, however, is lacking. There is an inverse relationship between vacancies and unemployment (the well known *UV* curve; see, for example, Van Ours (1991)). Therefore, we use

3 Other competing advertising channels, like sports sponsoring and movie theatre commercials, have too small a turnover to be of any importance.

unemployment as an indicator of job advertising, assuming a negative influence of unemployment on other advertisements.

Furthermore, we assume a positive effect of circulation on advertising rates as defined above, since a higher circulation makes newspapers as an advertising medium more attractive to advertisers. Besides, increasing circulation may be accompanied by increasing advertising volumes (per copy), also because of the higher attraction to advertisers. This implies a positive correlation of circulation and advertising volumes.

Finally, we investigate the possible existence of a positive compensation effect of cost increases on advertising rates. Contrary to the reader market, we do not expect the advertising market to give any opportunity for compensation for losses that are specific to newspaper businessess, *i.e.* losses on the reader market.

Summarizing we have:

$$q_{bg} = f_{bg}(\underset{-}{p_a}, \underset{+}{C}, \underset{+}{I}, \underset{-}{q_c}, \underset{+}{p_c}, \underset{+}{q_l}, u_{bg}) \tag{6}$$

$$q_{ot} = f_{ot}(\underset{-}{p_a}, \underset{+}{C}, \underset{+}{I}, \underset{-}{U}, \underset{-}{q_c}, \underset{+}{p_c}, \underset{+}{q_l}, u_{ot}) \tag{7}$$

$$p_a = f_{pa}(\underset{+}{q_l}, \underset{+}{k}, \underset{+}{p_c}, u_{pa}) \tag{8}$$

I = volume of aggregate investment
U = unemployment
q_c = volume of advertising in competing media (*e.g.* TV)
p_c = price of advertising in competing media

Figure 5 gives a graphical overview of the complexity of relations in and between the reader and advertising markets.

4 ESTIMATION RESULTS

We did not have *a priori* ideas about the dynamic specification of (3), (4), (6), (7), and (8), so we simply tested for level of integration, cointegration and several lagged reaction patterns (Engle and Granger (1987)). The same holds for the stochastic specification of the u_x. Chang (1977) and Gemill (1980) give some microeconomic directions for specifying functional forms f_x, using Box-Cox transforms of all variables.

Taking first differences appeared to be necessary. Furthermore, the results of the analysis appeared to be robust with respect to functional specification. Therefore we use the specification that allows us to interpret the coefficients directly as elasticities: we estimate (3), (4), (5), and (8) with the variables specified in annual percentage increases.

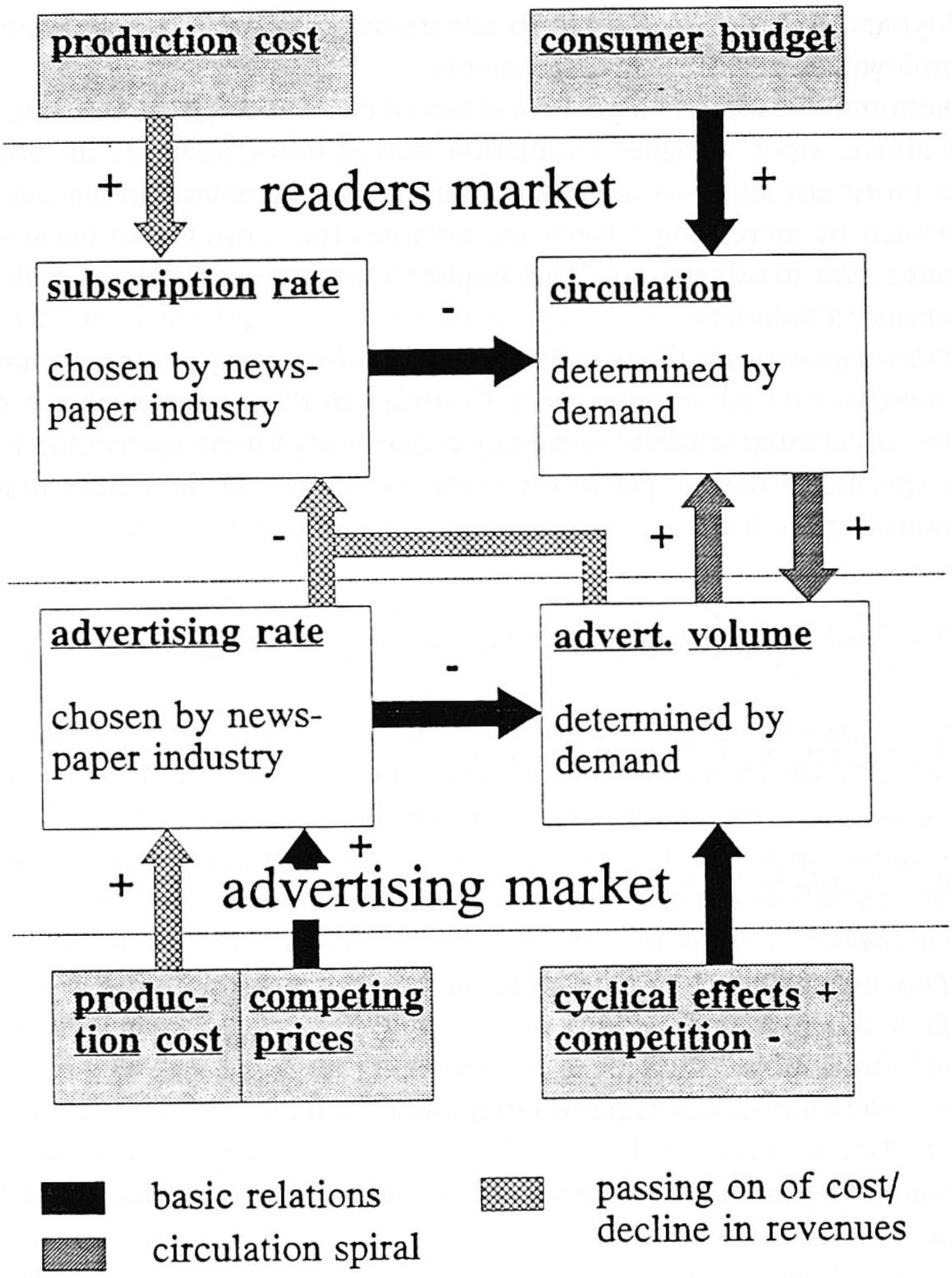

Figure 5 – Relations in and between the reader and the advertising market

Estimation of the circulation equation (3) over the period 1968–1991 gives[4]:

$$q_t = \underset{(0.59)}{0.00} + \underset{(4.98)}{0.56}\, q_t(-1) + \underset{(3.29)}{0.19}\, C(-1) - \underset{(4.37)}{0.15}\, p_t, \qquad (3')$$

$$R_a^2 = 0.82, \quad \text{and} \quad Q_9 = 3.04(0.98)$$

4 Absolute t-values are given in parentheses. R_a^2 is R^2 adjusted for the degrees of freedom. Q_n is the Box-Pierce Q-statistic, which is chi-square distributed with n degrees of freedom (see for instance, Harvey (1981), sections 1.5 and 7.5). The probability is added in parentheses. DW is the Durbin-Watson statistic of first order autocorrelation. The model is estimated with ordinary least squares.

The equation fits the data well. The Q-statistic indicates white noise residuals. The short-term income elasticity of copies demand equals 0.19. The short-term price elasticity equals -0.15. The long-term elasticities are 0.43 and -0.34, respectively. Clearly, the elasticities have the right sign, and do not differ much from those reported by Van Ours (1983) and Alsem *et al.* (1989b).

As in previous research, we find a remarkably small price elasticity of copies demand. This supports the theoretical specification of price equation (4): revenue on the reader market can be increased by raising the price. Finally, adding advertising revenue did not improve the estimation results, indicating that one half of the circulation spiral, and thus the spiral itself, does not exist at the market level.

Estimation of price equation (4) for the period 1968–1990 gives:

$$\underset{}{p_l} = \underset{(3.96)}{0.02} - \underset{(5.60)}{0.43}\, y_a(-\tfrac{1}{2}) + \underset{(4.08)}{0.58}\, k\,, \qquad (4')$$

$$R_a^2 = 0.63,\ DW = 2.05 \quad \text{and} \quad Q_9 = 6.54(0.77)\,.$$

Again, the empirical fit is good, as are the stochastic properties of this equation with white noise disturbance. Equation (4') implies an elasticity of price with respect to advertising revenue of -0.43, and an elasticity with respect to costs of 0.58. Clearly, newspaper businesses are passing financial drawbacks on to their readers. The size of the effect of advertising revenue on price corresponds to the effect found by Van Ours (1983).

An eye-catching detail is the delayed reaction of price on advertising revenue changes. This might be the result of slow information processing. Revenue figures become available only at the end of an accounting period. Probably, there is some anticipation of developments when first signalled, but full adjustment can only be achieved when actual figures become available.

Estimation of advertising volume equations (6) and (7) for the period 1968–1990 gives[5]:

$$\underset{}{q_{bg}} = \underset{(1.86)}{0.03} + \underset{(2.92)}{0.71}\, I(-\tfrac{1}{2}) - \underset{(3.59)}{0.92}\, p_a - \underset{(2.69)}{0.32}\, q_{ster} \qquad (6')$$

$$- \underset{(2.94)}{0.16}\, d_{1971}, \quad \text{with}$$

$$R_a^2 = 0.51,\ DW = 1.72, \quad \text{and} \quad Q_{10} = 4.53(0.92);$$

5 *A dummy had to be introduced to eliminate an extreme residual.* d_t is a dummy, such that $d_t = 1$ in year t, and $d_t = 0$ elsewhere. d_{s-t} is a dummy, such that $d_{s-t} = 1$ from year s up to year t, and $d_{s-t} = 0$ elsewhere.

$$q_{ot} = \underset{}{-0.01} + \underset{(0.55)}{0.27}\, I + \underset{(1.46)}{1.72}\, C - \underset{(4.21)}{0.42}\, p_a(-1) - \underset{(2.01)}{0.20}\, U, \quad \text{with} \qquad (7')$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad (3.42)$$

$$R_a^2 = 0.85,\ W = 1.93 \quad \text{and} \quad Q_{10} = 3.32(0.97)\,.$$

Again, only white noise disturbances had to be used to get good statistical properties. Branded goods' advertising is negatively affected by television commercials: every 1% increase in the volume of TV advertising leads to a 0.32% percent decrease in the volume of branded goods' advertising in newspapers. As expected, no effect on other advertising was found.

The cyclical effects of investment and consumer expenditure on branded goods' (elasticity = 0.71) and other goods' (elasticity = 1.99 altogether) advertising volumes are much stronger than the cyclical effects of consumer expenditure on copy demand (long-run elasticity = 0.43). Newspapers have mitigated their procyclical movement over the years by raising the share of copy revenue in total newspaper revenue. Furthermore, branded goods' advertising is much less affected by the economic climate than other advertising is. This may be explained by the fact that other advertising includes job advertising, which has a very high cyclical sensitivity. Advertising rate changes translate into a sharp decline in advertising volumes, with price elasticities of -0.92 and -0.42, respectively. Although this indicates a positive relation between advertising rates and revenue, the first elasticity does not differ significantly from -1, so rate changes may as well have no effect on branded goods' advertising revenue at all. Demand for branded goods' advertising is more price elastic than that for other advertising, probably because of better substitution possibilities. This supports the idea that newspaper businesses are not likely to compensate for revenue losses through price increases on the advertising market. However, we stick to the thought that cost increases are partly reflected in price.

Estimation of advertising rate equation (8) was somewhat cumbersome. Dummy variables had to be included to cope with an unexplainable outlier in 1974, and a difference in real advertising rate growth between the periods before and after this year. Estimation for the period 1963–1990 then yields:

$$p_a = \underset{}{0.00} + \underset{(0.85)}{0.49}\, k(-\tfrac{1}{2}) - \underset{(2.10)}{0.05}\, d_{63\text{-}73} + \underset{(3.65)}{0.16}\, d_{1974}, \quad \text{with} \qquad (8')$$
$$\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad\qquad (7.20)$$

$$R_a^2 = 0.77,\ DW = 1.83, \quad \text{and} \quad Q_{10} = 9.14(0.52)\,.$$

The stochastic properties of this equation are quite good. Unlike the second period, the period 1963–1973 had a downward sloping trend in real advertising rates. Compensation for cost increases also takes place through increases in advertising rates. The compensation effect seems to be somewhat smaller than

that on the reader market. This might be due to the fact that the advertising market is more price elastic than the reader market, which makes price rises on the advertising market less profitable. Introducing circulation as explanatory variable in equation (8') did not improve the estimation results. This indicates that, although circulation figures may matter in competition between individual newspapers, aggregate circulation is not a weapon in competition with other media.

Finally, adding variables concerning radio and TV advertising to (8') gave no additional explanation of the advertising rate. Thus, the increased competition with TV advertising has not affected advertising rates. Since we found a significant effect on the advertising volume, we conclude that increased TV advertising has had a significant effect on branded goods' advertising revenue (elasticity = 0.32). This is supported by earlier research by Van der Chijs (1976), Driehuis (1987, 1989) and Van Zoonen (1987).

Table 2 summarizes the estimation results in terms of elasticities.

TABLE 2 – ELASTICITIES

		C	I	U	p	q_{ster}		k	y
q_l	SR	0.19			– 0.15		p_l	0.58	– 0.43
	LR	0.43			– 0.34				
q_{bg}			0.71		– 0.92	– 0.32	p_a	0.49	
q_{ot}		1.72	0.27	– 0.20	– 0.42				

Explanatory note: dependent variables in rows; independent variables in columns. p means own price; y means revenue on other market; SR means short run; LR means long run.

5 PROJECTIONS UNTIL THE YEAR 2000

From the estimation results presented in section 4 it is obvious that the revenue of newspapers is to a large extent determined by macroeconomic developments. The growth of consumer income influences the circulation of newspapers, and, together with the growth of investment, the advertising volumes. As expected, the state of the labour market appears to have considerable effects on the volume of job advertisements. In addition, the developments of production costs and television advertising are important. Finally, there is interaction between the reader and the advertising market. If advertising revenue goes down, the price per copy goes up. In turn, this reduces the circulation somewhat.

The economic position of newspapers is influenced by many factors in a complex way. In order to disentangle the relative effects of various factors, we used the results from section 4 to do some simulations.

TABLE 3 – SIMULATED DEVELOPMENTS IN THE NINETIES

	High economic growth		Low economic growth	
	Expansion tv advert.	No expansion tv advert.	Expansion tv. advert.	No expansion tv advert.
%-change in 1992-2000 of				
Reader market				
circulaton (q_l)	3.0	4.3	– 4.8	– 3.5
price (p_1)	18.3	13.4	21.1	15.3
revenue (y_l)	21.8	18.3	15.3	11.3
Advertising market				
branded goods' adv. (q_{bg})	– 1.1	27.3	– 7.1	19.9
other advertising (q_{ot})	39.5	39.5	– 10.1	– 10.1
advertising rate (p_a)	12.4	12.4	0.0	0.0
revenue (y_a)	36.1	50.6	– 8.4	3.5
Total revenue (y)	29.6	36.0	2.3	7.0
Circulation				
(q_i; × 1,000)				
in 1992	4692	4629	4629	4629
in 2000	4767	4826	4405	4467
$q_l(2000) - q_l(1992)$	138	197	– 224	– 162

Explanatory note: the low (high) economic growth scenario assumes a 0%(2.5%) annual growth of the volume of aggregate consumption (C), a – 1%(2%) annual growth of the volume of aggregate investment (I), a 0%(3%) annual growth of the real newspaper cost indicator (k), and a 0%(– 5%) annual growth of unemployment (U); the (no) expansion of TV advertising scenario assumes a 10%(0%) annual growth of the volume of TV advertising.

Currently, Dutch newspapers are in a difficult economic position. Two main reasons are often mentioned. First, the Dutch economy is in a recession. Second, advertising on television is expanding rapidly due to the introduction of commercial television.

In our simulations we investigate the extent to which macroeconomic developments and TV advertising will influence the economic position of Dutch newspapers up to the year 2000. We distinguish 4 scenarios: high economic and low economic growth, both combined with high and low growth of TV advertising. In the high (low) growth scenario, we assume a high (low) growth of investment, consumption, and production cost, and we suppose unemployment to fall (rise). Of course, it is possible that the growth of TV advertising is also related to macroeconomic growth. But, TV advertising in The Netherlands may have its own momentum. Besides, we want to make a clear distinction between the effect of economic growth and the effect of TV advertising.

Table 3 shows the results of the simulations of these scenarios over the period 1992–2000. Only in the worst scenario, low economic growth and considerable

expansion of TV advertising in the nineties, real advertising revenue falls (by 8%). Even in this pessimistic scenario, however, this revenue loss is offset by a large real price increase on the reader market. Real revenue on the reader market increases in all scenarios. This indicates that on average the newspaper industry in The Netherlands is quite capable of saving its skin without government intervention. The simulations show that newspaper revenue is more sensitive to cyclical downswings than to the expansion of TV advertising. Low economic growth also decreases total newspaper circulation.

6 CONCLUSIONS

In this article we investigate some important aspects of the economics of Dutch newspapers. We analyzed both the reader and the advertising market. The reader market is characterised by low income and price elasticities, which are, even in the long run, smaller than 0.5 in absolute value. The advertising markets are to a large extent determined by investment, consumer expenditure, and the situation on the labour market (personnel advertisements). From this we conclude that revenue from both markets is mainly influenced by macroeconomic developments. Model simulations show that the influence of TV advertising on newspaper revenue from the advertising market is negative but limited.

If there is a chance that the economic situation of Dutch newspapers deteriorates due to macroeconomic developments, the most obvious way out for the industry is to increase the price per copy. Given the low price elasticity, this will lead to a small reduction in total newspaper circulation. The simulations show that this way real revenue can increase even in the face of low economic growth and a considerable expansion of TV advertising.

Our simulations refer to the total newspaper industry and do not say anything about the economic situation of individual newspapers. The reduction of total circulation in our most pessimistic scenario is about 5% on average. While this decline may not be much on average, it is possible that particular newspapers suffer substantially more. Furthermore, low income groups of readers will suffer more than high income groups from real price increases. We also neglected developments in the market structure. It is quite possible that under harsh circumstances the newspaper industry can only survive by mergers.

Our main conclusion with respect to the newspaper industry as a whole is quite clear. Even in bad (economic) times, the Dutch newspaper industry is quite capable of taking care of itself.

APPENDIX

SYMBOLS AND DATA

Table 4 gives an overview of the variables used in statistical analysis.

TABLE 4 – VARIABLES USED IN THE ANALYSIS

Symbol	Meaning
y_l	real revenue on reader market
p_l	price on reader market
q_l	circulation
y_a	revenue on advertising market
p_a	advertising rate
q_{bg}	volume of branded goods' advertising
q_{ot}	volume of other goods' advertising
q_{ster}	volume of TV (STER) advertising
p_{ster}	price of TV (STER) advertising
C	volume of household consumption
I	volume of gross investments in capital goods by businesses
U	unemployment
k	real production cost indicator

Information on these series was provided by

- BBC: Reklame in cijfers (Advertising in Figures), Bureau voor Budgettencontrole, Amsterdam, several years,
- CBS: Sociaal-economische maandstatistiek (Socio-economic Monthly Statistics), Centraal Bureau voor de Statistiek/Staatsuitgeverij, The Hague, several months (before 1984 Sociale maandstatistiek),
- CPB (CEP): Centraal economisch plan (Central Economic Plan), Centraal Planbureau/SDU Uitgeverij, The Hague, several years,
- CPB (LMR): Lange macroreeksen (Long-Run Macroeconomic Series), Centraal Planbureau, The Hague,
- NDP: De Nederlandse Dagbladpers in 1991 (The Dutch Daily Press in 1991), annual report of Vereniging de Nederlandse Dagbladpers, Amsterdam, 1991, and other years,
- STER: annual reports, Stichting Ether Reclame, Hilversum, several years, and

Only yearly figures were used. All nominal figures were deflated by the consumer price index (source: CEP). Information on y_a and y_l is provided by NDP. For p_l the quarterly subscription rate is used, for p_a the 5000 mm advertising rate (source: NDP). Data on q_{bg} are constructed by dividing branded goods' advertising revenue (source: BBC) by p_a. In the same way data on q_{ot} are constructed. Cost indicator k is the hourly wage rate of senior male production workers in the graphical industry (source: CBS). C and I are indices of volume figures provided by CEP. U is the number of unemployed job seekers in labour years (source: LMR). q_{ster} is the supply of advertising space on public television in seconds, which never exceeded demand (source: STER). p_{ster} is the price per second of this advertising (source: STER).

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Summary

SELLING NEWS AND ADVERTISING SPACE: THE ECONOMICS OF DUTCH NEWSPAPERS

This article presents an analysis of developments over the period 1968–1991 on both the reader and advertising markets of Dutch newspapers. We are interested in the characteristics of both markets and in the interactions between the two markets. Our analysis shows that newspaper revenue is mainly influenced by macroeconomic developments. A negative influence of TV advertising on revenue from the advertising market exists, but is fairly limited. The newspaper industry as a whole seems to be able to deal with these threats to their revenue by raising the real prices they charge for their products.